

Appl. No. 09/975,797
Amdt. dated February 28, 2005
Reply to Office action of December 29, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1.(previously presented): A corrosion resistant brine fluid comprising:

water;

a source of water soluble cations where the cations are selected from the group consisting of sodium, calcium, zinc, ammonium, rare earths, and mixtures thereof to form a brine with the water; and

an additive present in a concentration ranging from about 0.05 to about 2.0 moles of additive per mole of cation, in the absence of added arsenic;

where the density of the brine is at least 11 pounds/gal (1.3 kg/l), and where the additive is selected from the group consisting of ammonia, hydrazine, azoles, piperidines, piperazines, aziridines, azides, betaines, amino acids, guanidines, salts of hydrazine, azoles, piperidines, piperazines, aziridines, azides, betaines, amino acids, ureas, guanidines, thereof, and mixtures thereof.

2. (canceled)

3. (previously presented): The corrosion resistant brine fluid of claim 1 where the source of water soluble cations is a salt selected from the group consisting of chloride, bromide, acetate, and formate salts.

4. (original): The corrosion resistant brine fluid of claim 1 where the source of water soluble cations is a source of water soluble zinc cations.

5. (previously presented): The corrosion resistant brine fluid of claim 4 where the source of water soluble zinc cations is selected from the group consisting of zinc chloride and zinc bromide.

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6.-9. (cancelled)

10. (original) The corrosion resistant brine fluid of claim 1 further comprising at least one additional corrosion inhibitor.

11. (original) The corrosion resistant brine fluid of claim 1 further comprising at least one hydroxy carboxylic acid complexing agent.

12. (currently amended) A corrosion resistant brine fluid comprising:

water;

a source of water soluble cations where the cations are selected from the group consisting of sodium, calcium, zinc, ammonium, rare earths, and mixtures thereof to form a brine with the water; and

an additive selected from the group consisting of ammonia, alkyl or aryl amines of the formula $R^1R^2R^3N$, where R^1 , R^2 , and R^3 , are independently selected from the group consisting of hydrogen, or hydrocarbon radical or substituted hydrocarbon radical, where the substituent is selected from the group consisting of oxygen, sulfur, halogen and mixtures thereof; where the sum of the number of carbon atoms in R^1 , R^2 , and R^3 , if any, is 20 or less; aniline, azoles, piperidines, piperazines, aziridines, betaines, amino acids, guanidines, salts thereof, and mixtures thereof, where the additive is present in a concentration ranging from about 0.05 to about 2.0 moles of additive per mole of cation, in the absence of added arsenic, where the density of the brine is at least ~~11~~19 pounds/gal (~~1.132~~2.28kg/l).

13. (currently amended) A method for increasing the corrosion resistance of a brine fluid comprising:

providing a brine comprising ;

water;

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a source of water soluble cations where the cations are selected from the group consisting of lithium, sodium, potassium, calcium, zinc, ammonium, cesium, rare earths, and mixtures thereof to form a brine with the water; and

adding an additive to a concentration ranging from about 0.05 to about 2.0 moles of additive per mole of cation, in the absence of added arsenic;

where the density of the brine is at least 11 pounds/gal (1.3 kg/l), and where the additive is selected from the group consisting of ammonia, hydrazine, ~~azoles~~, piperidines, piperazines, aziridines, azides, betaines, amino acids, guanidines, salts of hydrazine, azoles, piperidines, piperazines, aziridines, azides, betaines, amino acids, guanidines, and mixtures thereof.

14. (cancelled)

15. (original) The method of claim 13 where in providing the brine the source of water soluble cations is a salt selected from the group consisting of chloride, bromide, acetate, and formate salts having cations selected from the group consisting of lithium, sodium, potassium, calcium, zinc, ammonium, cesium, and mixtures thereof.

16. (original) The method of claim 13 where in providing the brine the source of water soluble cations is a source of water soluble zinc cations.

17. (previously presented): The method of claim 16 where in providing the brine the source of water soluble zinc cations is selected from the group consisting of zinc chloride and zinc bromide.

18.-21. (cancelled)

22. (original) The method of claim 13 further comprising adding at least one additional corrosion inhibitor.

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23. (original) The method of claim 13 where in adding the additive, the additive is added in a controlled manner by contacting the brine with the additive in a vapor.

24. (original) The method of claim 13 further comprising adding at least one hydroxy carboxylic acid complexing agent.

25. (new) The brine fluid of claim 12 where the salts are selected from alkyl or aryl amines of the formula $R^1R^2R^3N$, where R^1 , R^2 , and R^3 , are independently selected from the group consisting of, a hydrocarbon radical or substituted hydrocarbon radical, where the substituent is selected from the group consisting of oxygen, sulfur, halogen and mixtures thereof where the sum of the number of carbon atoms in R^1 , R^2 , and R^3 , if any, is 20 or less; aniline, azoles, piperidines, piperazines, aziridines, betaines, amino acids, guanidines and the brine has a density of at least 11 pounds/gal (1.3kg/l).